Planning & Project Management of Water & Wastewater Projects

HYDER CONSULTING

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SAWEA Workshop 2007
4TH December 2007

Overview

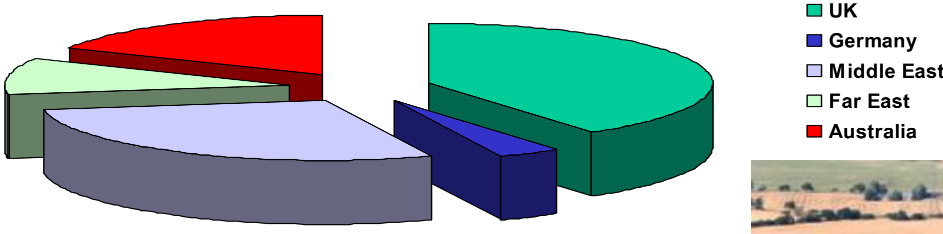
- A Brief Introduction to Hyder Consulting
- Stages in Development – Industry Drivers and Planning & Procurement Methods (1970s to 2000s)
- Case Study 1 – Doha North Wastewater Scheme
- Case Study 2 – Dublin Bay Project
- Future Trends & Issues
- Some Lessons Learned

Hyder Consulting Offices Worldwide

Australia
Bahrain
China
Cyprus
Germany
Hong Kong
Ireland
New Zealand
Qatar
Romania
Russia
UAE
UK
Vietnam

Sectors and Resources

- Transport, Property and Water & Environment Sectors
- 4000 staff (1200 in the Middle East)
- US$ 400m turnover



Work in Saudi Arabia 1967 – 2007

- Three Cities Drainage (Buraidah, Hofuf/Mubarraz & Qatif)
- Saihat, Qatif, Riyadh, Qassim, Taif and Abha
- Marafiq Corporatisation and Jeddah PPP Transactions

- Capital Cities – Cairo, Abu Dhabi, Doha, Kuwait, Istanbul, Athens, Dublin and London

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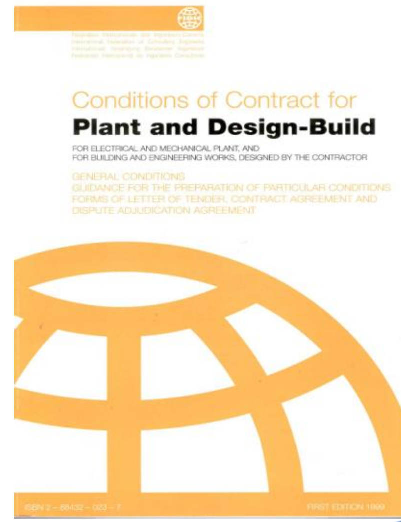
150 YEARS

STAGES IN DEVELOPMENT– INDUSTRY DRIVERS and PLANNING & PROCUREMENT METHODS

1990s

- Main Drivers
  - Increased legislation/regulation
  - Whole-life costing
  - Increased risk sharing by clients
  - Outsourcing of O&M (Abu Dhabi)
  - Asset Management Planning techniques required
  - Availability of new advanced treatment technologies



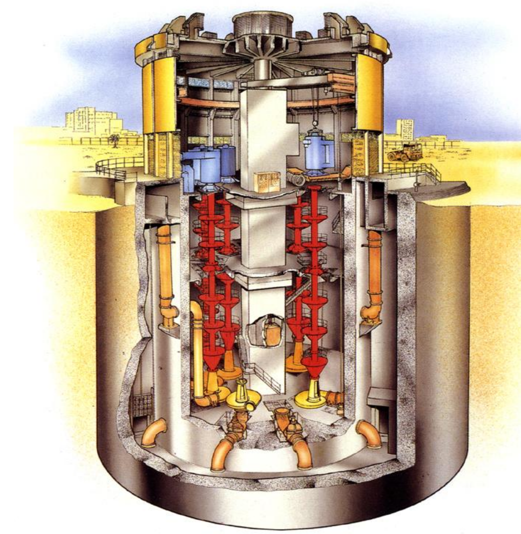
- Planning & Procurement
  - Planning by Client with Consultant Support
  - DB, DBO and DBFO contracts by Contractors
  - Growth in Partnering, PPP and PFI in the industry
  - Long-term (10-30 years) O&M by Contractors

STAGES IN DEVELOPMENT– INDUSTRY DRIVERS and PLANNING & PROCUREMENT METHODS

1980s

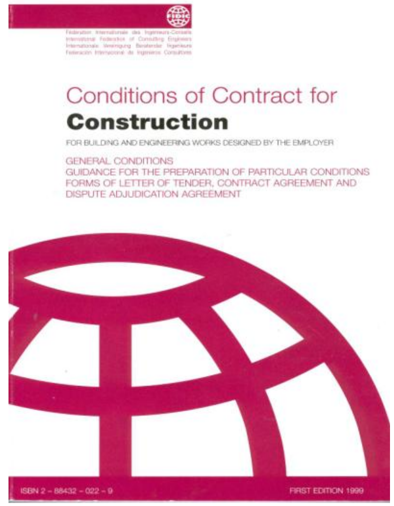
- Main Drivers
  - Need for economic certainty in project outcome
  - Growth in Design & Build contracting
  - Growing need to reuse water (TSE) requiring more advanced treatment

- Planning & Procurement
  - Planning and Project Management by Consultant
  - Design & Build by Contractor and Supervision by Consultant
  - Operation & Maintenance by Client
  - Growing client expertise with expatriate technical support
  - Changing roles of Consultant and Contractor



1970s

- Main Drivers
  - Public Health Issues - provision of clean water supplies and wastewater disposal
  - Often a lack of client technical experience and immaturity of local markets



- Planning & Procurement
  - Planning, Design and Project Management by Consultant
  - Construction by Contractor and Supervision by Consultant
  - Operation and Maintenance by Client

STAGES IN DEVELOPMENT– INDUSTRY DRIVERS and PLANNING & PROCUREMENT METHODS

2000s

- Main Drivers
  - Development and Population Growth – Private Development boom
  - Increased environmental protection and higher treatment standards required with enforcement
  - Ageing infrastructure
  - Demand for cost efficiencies, O&M effectiveness and performance and customer satisfaction
  - Climate Change – Water shortages and flooding risks
  - Increased time and programme pressures

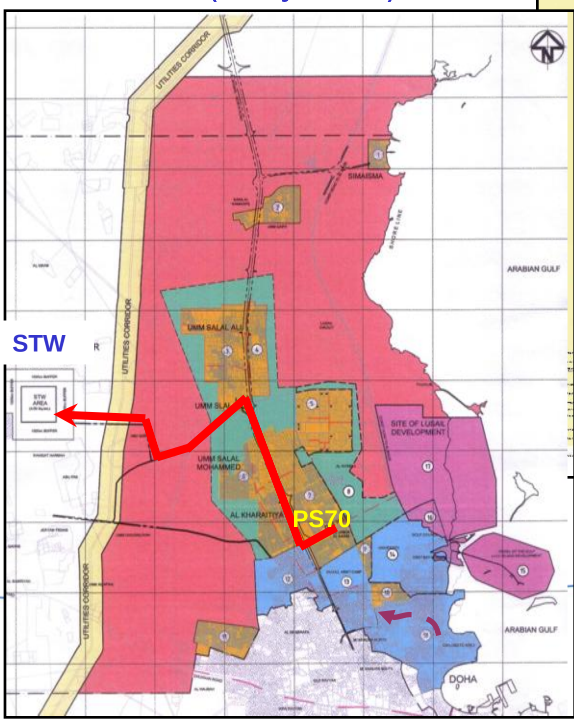
- Planning & Procurement
  - Continued growth in privatisation and outsourcing of services
  - Need for fast-track planning and procurement methods
  - Closer working relationships between Clients & Consultants and Clients, Consultants and Contractors

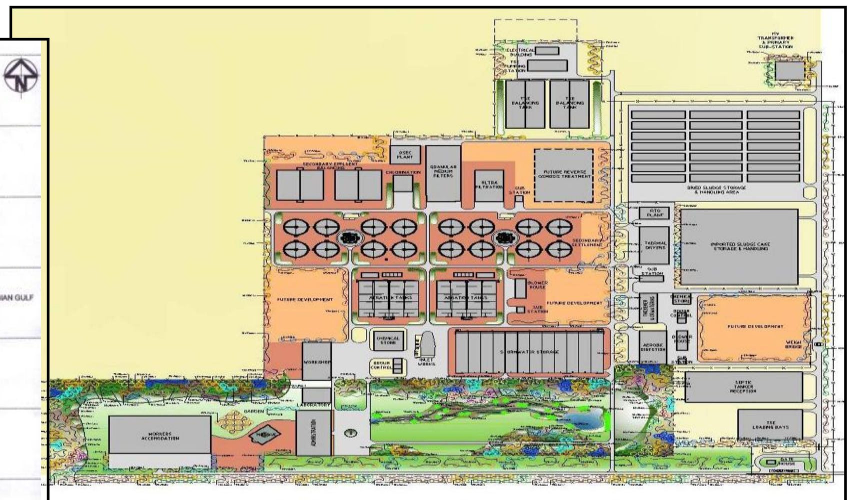
CASE STUDY 1

Doha North Wastewater Scheme

- Population served: 1.2m
- Contracts: 4 no. modified FIDIC/traditional
- Flow: 324,000 m^3/d average (2 phases)
  (10 m^3/d peak)

- DBO (10 years)





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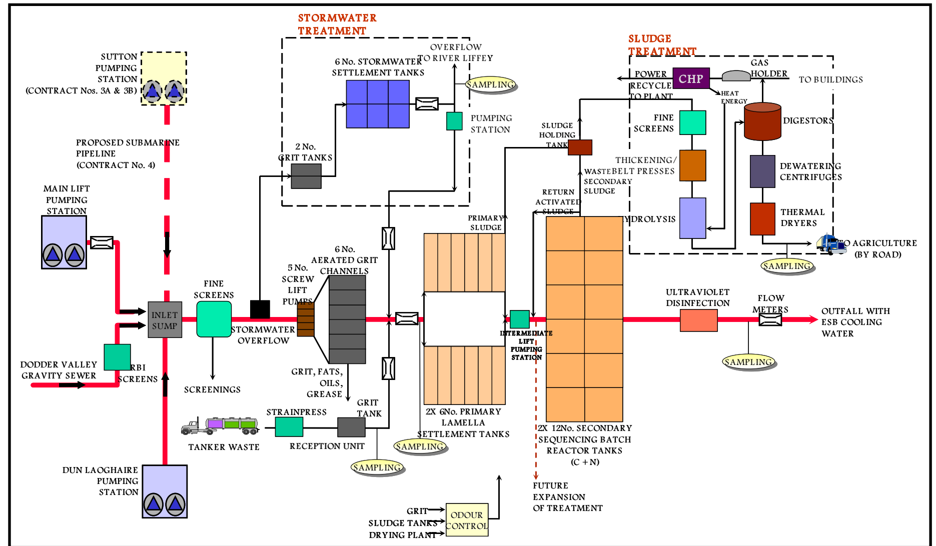
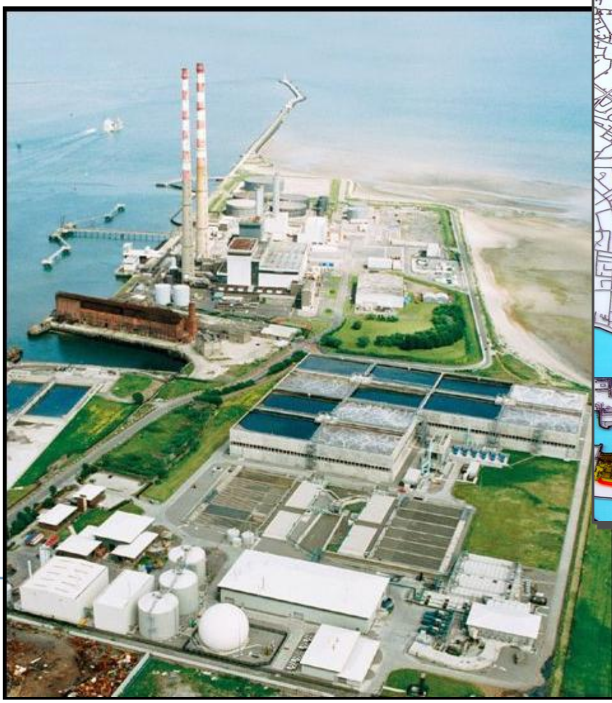
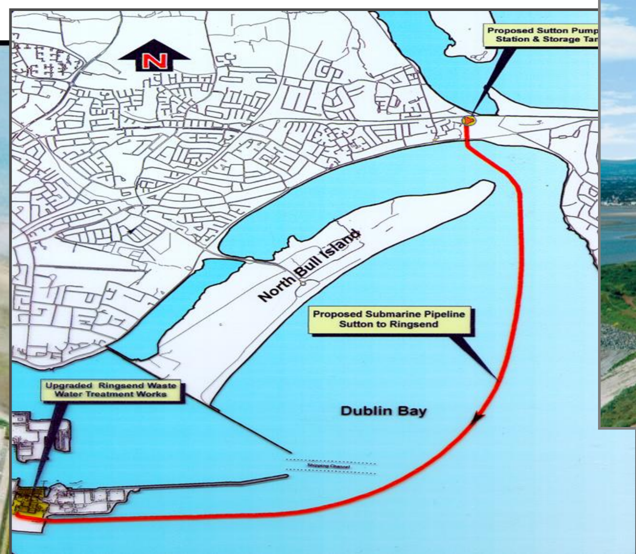
CASE STUDY 2

Dublin Bay Project

- Population served: 1.7m
- Contracts: 5 no. FIDIC/traditional
- Flow: 490,000m^3/d average (23m^3/d peak)
- DBO (20 years)







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FUTURE TRENDS & ISSUES

- Experienced technical resources are becoming more scarce
- International competition increasing and new players - (multi-cultural implementation)
- Construction costs are rising – (fixed price / indexed ?)
- More effective planning & procurement required and efficiencies in O&M delivered
- More integrated infrastructure planning and implementation required
- Is Private Sector ready and able to participate long-term in infrastructure and services provision?
- Are there socio-economic difficulties in the privatisation of infrastructure and services?
- Is long-term sustainability of infrastructure assured?

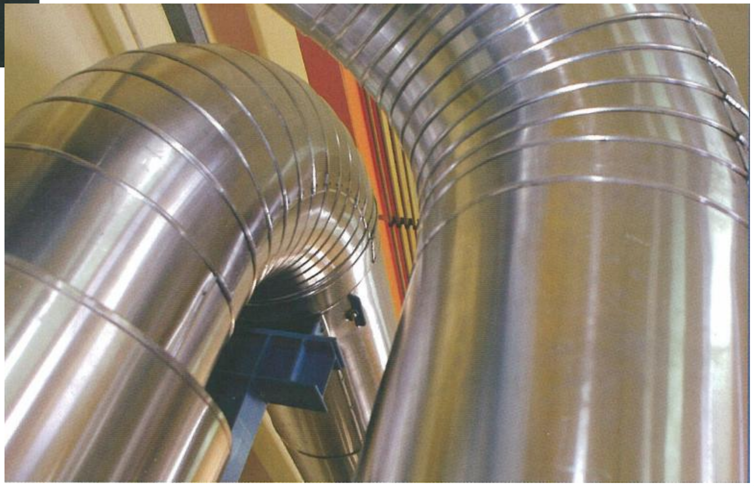
Water is an increasingly valuable resource
- and must be used and reused efficiently !

SOME LESSONS LEARNED

- Benefit of engaging independent and experienced Consultants
  - Key Client/Consultant relationship during planning & procurement phases
- Agreed level of risk sharing determined in contracts (FIDIC/bespoke)
- Engage the market then use selective procurement
- Need good data to be made available to Tenderers
- Maximise flexibility - but minimise interference and variations
- Fair payment mechanisms to reflect risk and uncertainties
- Minimise/eliminate adversarial approach to contracts

Choose Consultants and Contractors by value not cost !

Thank you



Questions ?